

## REMARKS

By this amendment, claim 2 has been cancelled and claims 1, 8, 11, 13 and 20 have been amended. No new matter has been added.

Claims 1, 3-21 remain pending in the application. Reconsideration and allowance of all of the claims is respectfully requested in view of the foregoing amendment and the following remarks.

### In regard to Claim Rejection Under 35 USC § 112

The Examiner has rejected claim 11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner considers the use of the trademark/trade name 'Delrin' to be indefinite. In response, claim 11 was amended by removing the term 'Delrin'.

The Applicant respectfully submits that this rejection has been addressed and overcome by the present amendment.

### In regard to Claim Rejection Under 35 USC § 103(a)

The Examiner has rejected claims 1-7, 9, 11-20 under 35 U.S.C. § 103(a) as being unpatentable over Obata et al. (JP2000-003705) in view of Imai '515. The Applicant respectfully submits that this rejection has been addressed and overcome by the present amendment.

The applicant amended claim 1, which relates to a method of laminating a lithium or lithium alloy sheet into a thin film, by adding the following limitations to further distinguish the present invention from the prior art cited.

The Examiner's attention is respectfully directed to the following elements of currently amended claim 1. Amended claim 1 now defines that the step of measuring the evenness of the thickness of said lithium or lithium alloy film of reduced thickness with an optical system and adjusting the profile defined by said meeting surfaces of the pair of working rollers in

response to measurement of the optical system. Neither Obata et al. nor Imai '515 disclose the use of an optical system to verify the evenness of the thickness of the laminated sheet and adjustment of the profile of the meeting surfaces of the working rolls in response to measurements of the optical system.

Imai discloses measurement of the rolling force  $P_r$  of the working rolls via load cells 14 and adjustment of the bending of the working rolls in accordance with the prospected value of the rolling force and the sheet width based on mathematical relations between various factors. However Imai does not provide a system, optical or others, for verify the evenness of the laminated sheet being produced and means to adjust the bending of the working rolls in response to measurements of the laminated sheet.

Amended claim 1 further defines that the adjustment of the profile of the meeting surfaces of the working rolls is done through a deviation of 10 microns or less from a linear profile which reflects the minute adjustments necessary to produce an even lithium thin sheet as the present invention does. Neither Obata et al. nor Imai '515 disclose such minute adjustments of the working rolls.

For the reasons outlined above, the applicant submits that Amended claim 1 is patentable over Obata et al. in view of Imai since neither disclose the limitations of measuring the evenness of the thickness of the lithium or lithium alloy film of reduced thickness with an optical system and adjusting the profile defined by said meeting surfaces of the pair of working rollers in response to measurement of the optical system. Furthermore, the present invention as defined in Amended claim 1 would not have been obvious to one having ordinary skills in the art since no suggestion is made in either Obata et al. nor Imai to provide a measurement system of any kind to adjust the lamination working rolls. Therefore, at least one element of amended claim 1 is neither taught nor suggested by either Obata et al. nor Imai and the Examiner is requested to withdraw his rejection of claim 1 and claims 3-7, 9-12 depending therefrom.

The applicant also amended claim 13, which relates to an apparatus for laminating a lithium or lithium alloy sheet into a thin film, by adding the following limitations to further distinguish the present invention from the same prior art cited.

Amended claim 13 now defines an optical measurement system for measuring the evenness of the thickness of said lithium or lithium alloy film of reduced thickness; and further defines

that the adjustment means is linked to the optical measurement system for adjusting the profile of the lamination surface defined by the pair of working rollers in response to measurement of the optical measurement system; Neither Obata et al. nor Imai '515 disclose an optical measurement system to verify the evenness of the thickness of the laminated sheet linked to the adjustment means (bending of working rolls) and adjustments of the profile of the meeting surfaces of the working rolls in response to measurements of the optical measurement system.

Imai discloses measurement of the rolling force  $P_r$  of the working rolls via load cells 14 and adjustment of the bending of the working rolls in accordance with the prospected value of the rolling force and the sheet width based on mathematical relations between various factors. However Imai does not provide a system, optical or others, for verify the evenness of the laminated sheet being produced and means to adjust the bending of the working rolls in response to measurements of the laminated sheet.

For the reasons outlined above, the applicant submits that Amended claim 13 is patentable over Obata et al. in view of Imai since neither disclose the limitations of measuring the evenness of the thickness of the lithium or lithium alloy film of reduced thickness with an optical measurement system and adjusting the profile defined by the meeting surfaces of the pair of working rollers in response to measurement of the optical system. Furthermore, the present invention as defined in Amended claim 13 would not have been obvious to one having ordinary skills in the art since no suggestion is made in either Obata et al. nor Imai to provide a measurement system of the laminated film to adjust the lamination working rolls. Therefore, at least one element of claim 13 is neither taught nor suggested by either Obata et al. nor Imai and the Examiner is requested to withdraw his rejection of claim 13 and claims 14-19, an 21 depending therefrom.

The Examiner also rejected claims 8 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Obata et al., in view of Imai '515 and further in view of Noe '283.

In response, claims 8 and 20 were amended by particularly defining a series of tightly packed upper rollers and lower rollers. Noe discloses a roller straightener comprising a pair of rollers s' which purport to guide the sheet metal in a straight line to the cold rolling rolls. The present invention as defined in claims 8 and 20 comprises a series i.e. more than one, of upper rollers and of lower rollers, tightly packed which are adapted to straighten and prevent

lateral weaving motion of a thin sheet as it is fed to the working rollers. The two rollers of Noe are insufficient to straighten and prevent lateral weaving motion of a thin sheet. The applicant therefore submits that claims 8 and 20 as amended are patentable over Obata et al., in view of Imai and further in view of Noe '283 as neither of them suggest the use of a series of tightly packed upper rollers and lower rollers. Therefore, at least one element of claims 8 and 20 is neither taught nor suggested by either Obata et al., Imai or Noe and the Examiner is requested to withdraw his rejection of claims 8 and 20.

In view of the above remarks, the Applicant respectfully submits that all of the currently pending claims are allowable and that the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in a better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

At the time of filing of the present response, the Office was authorized to charge the fees believed to be necessary to a credit card. In case of any under- or over-payment or should any additional fee be otherwise necessary, the Office is hereby authorized to credit or debit (as the case may be) Deposit Account number 502977.

Respectfully submitted,

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